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LEO J. HEFFERNAN FROM GENDREAU

BY PLODDING DONKEY AND WINDING IRISH LANE IT'S STILL A LONG WAY TO NEAR-BY TIPPERARY

But this colleen, idling home with sacks of flour from the town of the song, seems to enjoy the leisurely pace. Lush pastures have replaced wheatfields in this fertile region of Eire (Bulletin No. 1).

Bulletin No. 1, March 1, 1948

Eire Changes Little in World of Change

EIRE, where recent elections unseated Eamon de Valera as prime minister, is a country where change comes slowly. Mr. De Valera had headed the government of the Irish republic for 16 years.

One of the very few nations of northwest Europe to lag in industrialization, Eire remains for the most part her natural and brilliant "Emerald Isle" self. White cottages brighten the green countryside and cluster in villages. Unhurried sheep block rural lanes (illustration, cover), and equally unhurried herders often give honking tourists from America or England their first "change of pace" after debarking at Cork or Dublin.

Cromlechs and Leprechauns

Eire's lack of industry has been variously explained by its scarcity of good coal, its long history as a country ruled from near-by England, and by the temper of the people themselves. The people of Eire like to take their time—a gait unsuited to mass production. Time for witty storytelling, for spreading the blarney, and for silent meditation are important to them, especially to the two-thirds who farm.

Many travelers have been impressed with this almost Oriental detachment. They also have sensed the great antiquity that hangs over the land, connecting present-day life with the dim past. Crude hilltop cromlechs and cairns, built by forgotten men in a forgotten age, lend a classic touch to the landscape. Easily fitting into the picture are the fancied villages of leprechauns, mischievous "little people" who make shoes and hide crocks of gold in the roots of oaks.

But politically Eire is new. It was born as the Irish Free State in 1922 and took its present name when Gaelic was revived as a national tongue. It is a British dominion, like Canada and Australia. Eire's neutrality during World War II demonstrated its virtual independence of Great Britain.

Eire Covers Four-Fifths of Ireland

It was after World War I that the Irish redoubled their efforts and gained this freedom. In the eyes of many Irishmen, however, the victory was short of complete, for the northern counties preferred to remain a part of the United Kingdom, thus partitioning the Emerald Isle. Long-seated religious differences between the two sections of the island, plus the leaning toward Britain of many people in the northern counties, have kept the partition arrangement in force.

The six counties around Belfast were, and still are, labeled Northern Ireland. The other four-fifths of the island—more than 27,000 square miles—became Eire, with Dublin as the capital.

Today, with nearly 3,000,000 inhabitants, Eire has about a third more people than West Virginia, the state nearest it in size. Slightly more than a century ago all Ireland counted more than 8,000,000 persons.

ENTERED AS SECOND-CLASS MATTER APRIL 27, 1943, POST OFFICE, WASHINGTON, D. C., UNDER ACT OF MARCH 3, 1879.
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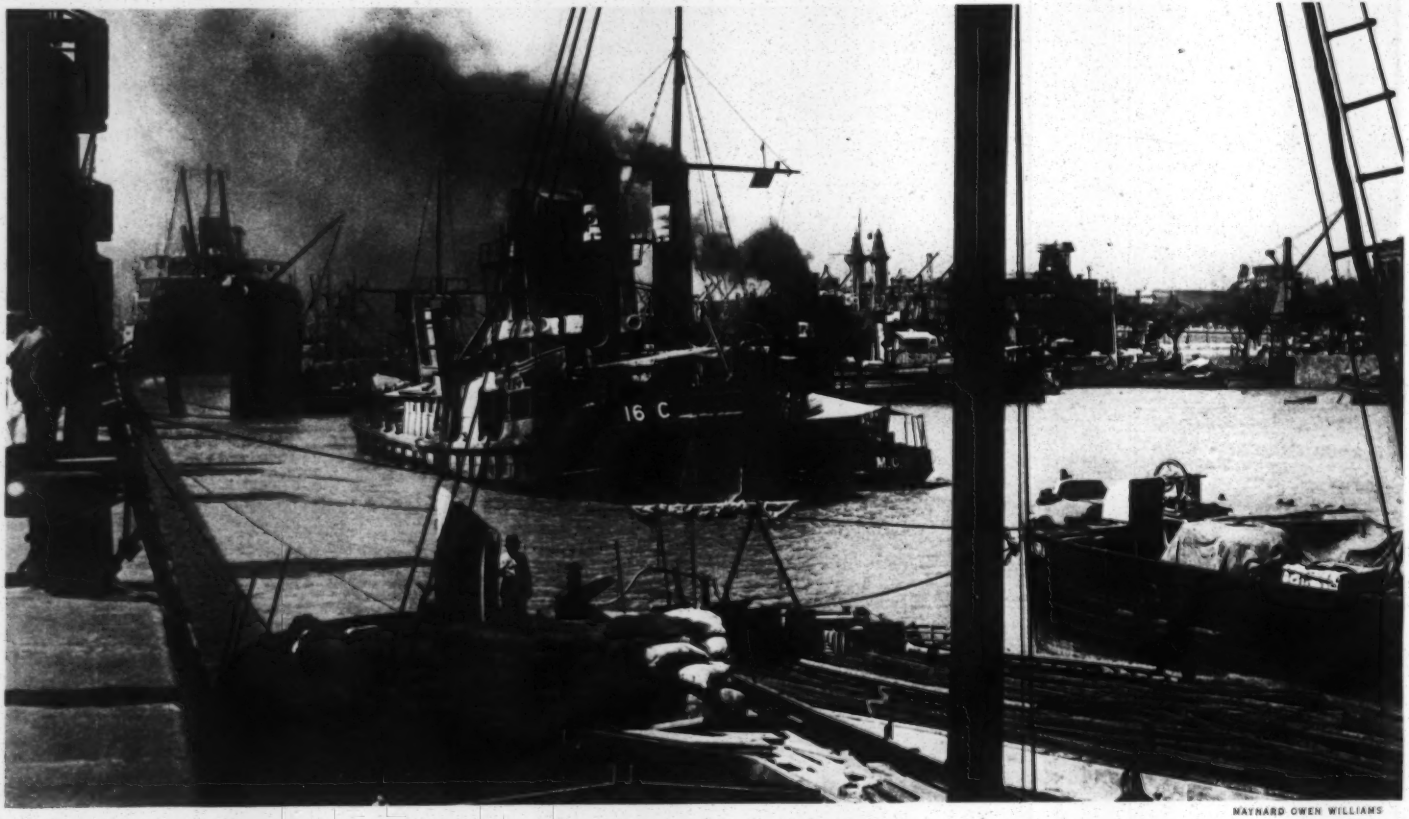


MAYNARD OWEN WILLIAMS

DREDGE 16-C, ONE OF A FLEET, WORKS CONSTANTLY TO KEEP CHANNELS CLEAR IN THE TEEMING HARBOR OF BUENOS AIRES

Mud brought down by the Paraná River (Bulletin No. 2) would quickly clog Argentina's great port but for its famous dredges. The letters MOP, seen on smokestacks and hull, stand for the government ministry which directs the never-ending silt-removal program. The muck once served a useful purpose; the city's extensive docks were built from mud flats.

Bulletin No. 2, March 1, 1948

Silt-Heavy Paraná Serves Argentine Ports

THE Paraná, great South American river-highway, serves world transport only as long as it is constantly dredged. Mountains of silt are carried in the mighty stream's annual flow. Dredges deepening the channels in Buenos Aires and Rosario, Argentina's one-two ports, are as familiar a sight as freighters and passenger ships (illustration, inside cover).

Buenos Aires, the southern hemisphere's greatest city and port, stands on the banks of the Rio de la Plata, not the Paraná, but it is Paraná mud which fills its channels. The Rio de la Plata is not a river in the usual sense, but a bay of the ocean. The Paraná flows into it a few miles north of Buenos Aires just as the Susquehanna flows into Chesapeake Bay north of Baltimore.

Nearly Equals the Mississippi

The Paraná is surpassed in length in South America only by the Amazon. It begins in Brazil, northwest of Rio de Janeiro, with the junction of the Paranahyba and the Rio Grande. From this junction to the open sea east of Buenos Aires, the river winds through 2,450 miles—almost exactly the length of the Mississippi.

The drainage basin of the Paraná also nearly equals that of the Mississippi system. The Paraguay, 1,500 miles long, is the longest tributary. The Uruguay, not strictly a tributary, joins the Paraná where it flows into the Rio de la Plata. These rivers form parts of the boundaries of four countries—Argentina, Brazil, Paraguay, and Uruguay, and aid the commerce of these four and Bolivia.

Rising in innumerable streams which plunge through the rain forests of Mato Grosso and drop from the more easterly plateaus of Brazil, the Paraná flows southward and widens to three miles before leaving that country. Where it touches Paraguay, it roars over the multiple cataracts of Guaira (illustration, next page).

In the tropical forests, among the orchids, parrots, herons, monkeys, and jungle animals, live a few Indians.

Floods and Silt Cause Shifting Channels and Banks

Along parts of Paraguay's eastern boundary the river is confined by steep banks up to 300 feet high, covered with gigantic bamboos. Turning westward, it flows through Argentine and Paraguayan swampland. Joined by the Paraguay River, it resumes its southward course, and makes a wide flood between reaches of low, partially inundated country.

Farther south, high cliffs, broken only occasionally by small valleys on either side, shut off the view of Argentina's rich grain and cattle country. The river splits into numerous channels separated by silt-built islands, and its banks shift with floods. This is the part of the Paraná most used for shipping.

Rosario, 227 miles upstream from Buenos Aires, is not the river's uppermost port for ocean-going vessels. Santa Fé, 150 miles farther upstream, is reached by a 19-foot channel. Thirty-foot depths are main-

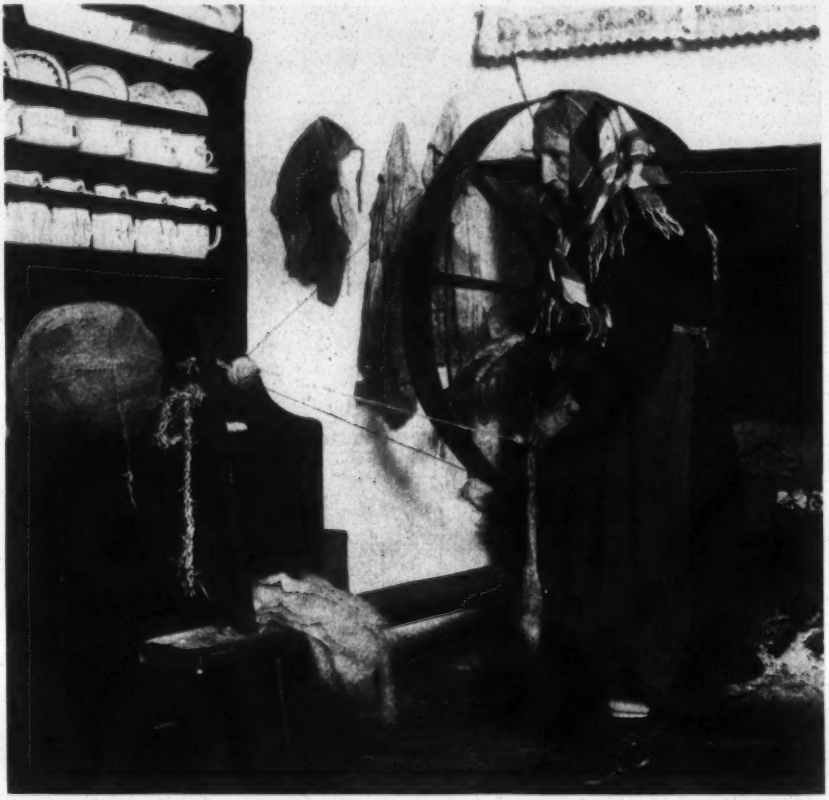
In 1845 the potato famine killed many and started mass emigration. One million Irish migrated to the United States within a five-year period. While never forgetting the "auld sod," they took firm root in their foster land and furnished much of the backbone and sinew for America's expansion in the 19th century.

The haunting beauty of landscape which Irishmen extol the world over is a result of much rain and poor drainage. The island is a flat plain surrounded by seacoast mountains. Through the plain meander sluggish rivers widening into lakes and seeping into steamy boglands. From the bogs, turf-cutters take peat for two million cottage fires.

The sea, nowhere more than 60 miles away, tempers the climate. But at the same time, the Atlantic brings howling storms that fling spray over the tops of 300-foot seaside cliffs. Thatched roofs of cottages near by would blow off like loose wigs if they were not anchored down by many plaited grass ropes.

NOTE: Eire is shown on the National Geographic Society's map of Europe and the Near East, and on A Modern Pilgrim's Map of the British Isles. Write the Society's headquarters, Washington 6, D. C., for a price list of maps.

For additional information, see "Old Ireland, Mother of New Eire," in the *National Geographic Magazine* for May, 1940; and "Ireland: The Rock Whence I Was Hewn," March, 1927.



CLIFTON ADAMS

AGE-GNARLED BUT DEFT FINGERS FASHION YARN FOR THE CLOTHES OF HER COUNTY GALWAY FAMILY

Bulletin No. 3, March 1, 1948

Tiny Monaco Seeks End to Ties with France

COMPLETE autonomy sought by Monaco, an enclave along the Mediterranean coast of France, recalls days when the little principality was an independent power in European politics. It is only since 1856 that it acquired world fame from the millions of francs won and lost over its Monte Carlo gaming tables.

Though considered an independent country, Monaco has been under France's watchful eye—especially in economic matters—since 1861. In times past it had been garrisoned by Spanish forces, until it conspired with France for their expulsion. Under German occupation in the recent war, Monaco reached record heights of prosperity. The army of 110 men (who double as fire fighters) did not resist the invaders. After the withdrawal of German forces, the eight square miles of Monaco were "out-of-bounds" for American soldiers.

Alps Crowd Monte Carlo to the Coast

The tourist center is Monte Carlo's famous square, into which open the Café de Paris, the opera house, the costly Hôtel de Paris, and the still more costly gambling Casino. Monte Carlo, with 10,000 residents, is the largest of three adjoining towns in Monaco. The principality's total population is 24,000.

North of Monte Carlo rise the steep slopes of Alpine foothills crowding the coast (illustration, next page). They are crossed by the Corniche Road which looks down on the town and the red tile roofs of surrounding villas, with the blue sea beyond. Mediterranean resort people from Cannes, Nice, and Menton reach Monaco by this Riviera highway.

The lure of flower-decked Monte Carlo, however, is not confined to its scenery, mild winter climate, sea beach, and excellent hotels. Roulette wheels spinning in the palatial Casino from ten o'clock in the morning until two o'clock the next morning attract those with a gambling instinct and the money to indulge it.

Monaco is one of the world's few tax-free states. Its revenue comes from Casino gambling—three per cent of the gross, plus a third of the net profits. Its prosperity rests on tourists, who numbered close to 50,000 in prewar years.

Once a pirate haven, the yacht harbor is protected from the west by a high peninsula of craggy rock, with a ravine between it and the mainland. This "little Gibraltar" and its harbor were responsible for Monaco's long and colorful history.

Now Has Representative Government

On the summit of the rock is the old town of Monaco, the seat of government. It has no hotels or other tourist accommodations save for an open-air restaurant, but it contains the prince's palace with its subtropical gardens. Narrow streets lead to homes of officials, the cathedral, and a marine museum.

Monaco has a national council, a legislative body of twelve members

tained for Buenos Aires and Rosario. Only licensed and highly expert pilots may take ships through the tricky, changing channels.

An Argentine naval captain has described the task of channel-dredging as a job that "will never be finished." He likened the situation to the lower Mississippi, which must also be constantly dredged, deepened, and stabilized, and where licensed pilots are necessary.

Silt, depositing through the centuries, has filled a cliff-walled arm of the sea that once extended 370 miles inland. The gulf reached to Diamante bluff, a few miles below Santa Fé. During flood stages the gulf seems to reassert itself. River steamers can then cross over the low islands direct from Rosario to Diamante.

River steamers drawing eight feet normally ascend the Paraná and the Paraguay as far as Asunción, Paraguayan capital. Some go on into Brazil, to Corumbá. This port serves a portion of eastern Bolivia.

Falls and rapids, however, prevent navigation of the Paraná throughout its upper reaches.

NOTE: The course of the Paraná and its tributaries may be traced on the Society's map of South America.

See also, "Buenos Aires: Queen of the River of Silver," in the *National Geographic Magazine* for November, 1939*; and "Buenos Aires to Washington by Horse," February, 1929.

EWING GALLOWAY

FOR A PICTURE, A ROCK-WEIGHTED BOAT TUMBLES OVER ONE OF GUAIRA'S 18 CATARACTS

Where the Paraná River flows between Brazil and Paraguay, it drops about 130 feet and forms the world's greatest waterfall in volume. Guaira's average mean flow far more than doubles that of Niagara. Fed by an annual rainfall of 79 inches in much of its watershed, the Paraná discharges more water into the ocean than any river except the Amazon and the Congo.

Bulletin No. 4, March 1, 1948

U. S. Fares Badly in Europe Weather Trade

THE weather man has pulled a "swap" on Europe and North America in serving up winter this year.

Last year he subjected the Old World to an unmerciful buffeting. This season he seems to be making amends by switching the worst of his icy fury to the western side of the Atlantic.

The Snows of Yesteryear

The blazing sun at St. Moritz, Switzerland, ran the early February thermometer to 50 degrees. Turning skating rinks into pools, it put the Winter Olympic Games not "on ice," but temporarily off. The unseasonable mildness was one small sample of how Europe and North America have traded their winter weather of a year ago.

Cold, snow, sleet, and finally hurricane in 1946-47 added up to one of the Old World's hardest winters of the 20th century. When peak production was most sorely needed in the war-torn lands, transportation was paralyzed by the succession of blizzards. Milk, coal, gas, oil, and electricity supplies failed.

February cost Great Britain alone more than $300,000,000 in storm-lost production of coal, power, and manufactures. London and Paris took worse weather than New York has had so far this winter. It kept coming right to the Ides of March when the hurricane pulled the Thames River to its highest flood stage since 1894.

Toulouse and other cities in southern France in late January, 1947, registered their lowest temperatures for a century. A year later to the day, snow-clad Atlanta and Mobile matched cold with Fairbanks, Alaska, briefly in the grip of a "heat wave."

Deep Freeze for the United States

The present winter in Great Britain and western Europe has averaged five or six degrees warmer than last year. Snow and subfreezing temperatures have been rare. Spring flowers have been deceived to the point of blooming. Power plants have fuel in reserve as mining and transportation have gone on without interruption.

But meanwhile, in the United States, near-record cold has been striking Maine, North Dakota, and other border states. The country's record low, minus 66 degrees, dates back to February, 1933, at Yellowstone Park. It compares with 81 degrees below for the Canadian Yukon, and 94 below, claimed for eastern Siberia. Admiral Byrd, reporting 90 below on Antarctica, suggests that air above the south polar plateau probably cools to minus 100 degrees.

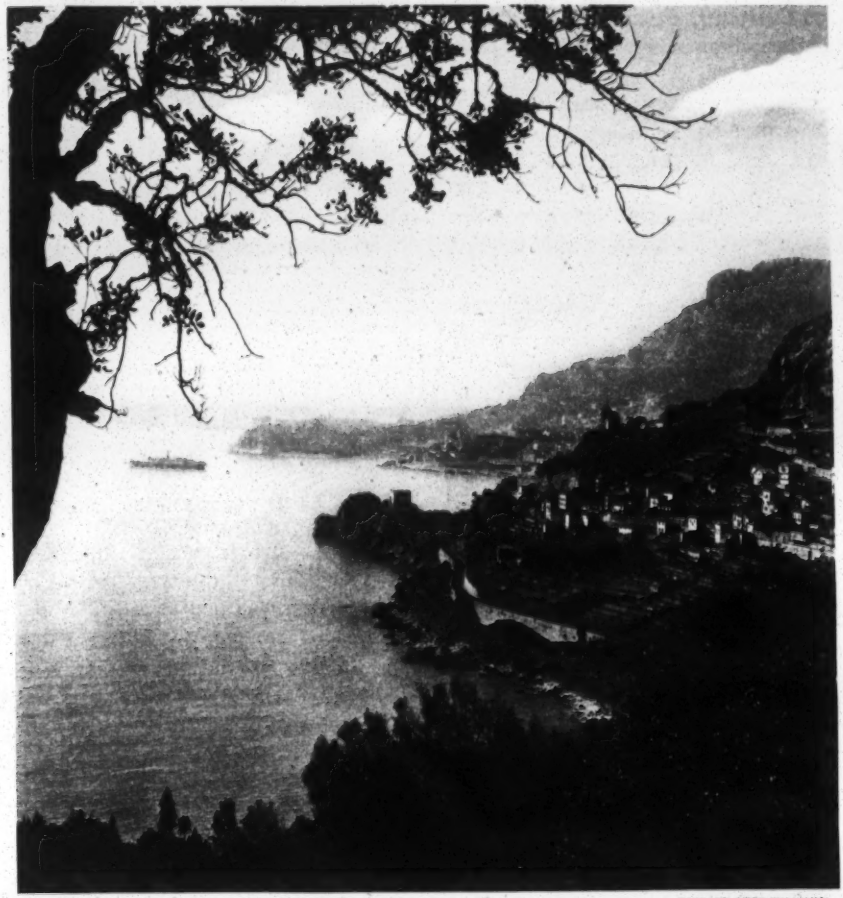
Snow has been bad but it's been worse in the past. Gale conditions and subzero temperature made the 30-hour blizzard of March 11-12, 1888, a paralyzing ordeal for New York City, even though the snowfall was four inches less than the 25.8-inch total of last December 26. In both 1899 and 1922, Washington, D. C., had deeper snowfalls than the one that recently blanketed New York.

who are elected every four years by universal suffrage. The prince, who was an absolute ruler until 1911, is also assisted by a ministry and a council of state.

It was in the 14th century that Monaco reached the height of its political power under Carlo I, "Charles the Seaman." Monaco then was larger and Carlo had 10,000 soldiers and a respectable navy of 30 galleys under his command. He allied himself with the more profitable side in many international disputes. Fighting for France in her war with Edward III of England, Carlo's navy contributed to the defeat of the English fleet off the Channel Islands in 1343.

NOTE: Monaco may be located on the Society's map of Central Europe and the Mediterranean.

For additional information, see "Life's Pattern on the Riviera," in the *National Geographic Magazine* for January, 1935.



MAYNARD OWEN WILLIAMS

HEMMING IN MONACO, TERRACES—NATURAL AND MAN MADE—RISE FROM SEA TO ALPINE PEAKS

A cruise ship stands off Monaco's rocky peninsula-town. In the far distance, beyond the settlements of the little principality, the Tête de Chien rises 1,886 feet. This entire stretch of coast is a succession of resort towns, many of which began their careers as unpretentious fishing villages.

Division of Bengal Upsets No. 1 Industry

DIVISION of the old Province of Bengal between the new dominions of Pakistan and India has paved the way for long-drawn-out dissension. The dividing line, passing east of Calcutta, gave to India the largest city of what was Britain's Empire of India. Calcutta was the capital of the old Bengal Province. Pakistan's share of Bengal (its present East Bengal Province) includes nearly all the jute-growing lands which supply the raw material for the jute mills of Calcutta, the city's chief industry.

New Customs Duties Complicate Trade

The jute trade is of great importance to both the dominions. Now that the land of its source and the land of its completion are "foreign" countries to each other, the jute industry has suffered severe disruption. Customs duties imposed by both dominions are tangible evidence of the changed status of Bengal's two parts, adding to the confusion and difficulties.

Jute is Bengal's foremost cash crop. It was the leading export of the Empire of India. It averaged nearly one-fourth by value of the export trade. The plant's fondness for damp heat, plus availability of cheap labor, made the humble fiber a virtual monopoly for Bengal.

In several years India produced more than four billion pounds of jute. Two-fifths of the crop was normally exported as fiber. Calcutta's mills transformed the remainder into cordage, burlap, sacking, and bags.

The hot, humid climate of Bengal provoked one of Mark Twain's characteristic comments on weather. Cold weather in India, he wrote in *Following the Equator*, is merely "a conventional phrase come into use through the necessity of distinguishing between weather which will melt a brass doorknob and weather which will only make it mushy."

Rivers Have Built up the Plain

Bengal was old India's most densely populated section. It was a heavy producer of rice, yet at times it has suffered some of the worst famines in history.

Geographically, Bengal is notable for its remarkable delta formation. There the sacred Ganges and the Brahmaputra meet near the end of their 1,500- and 1,800-mile journeys. The great silt-bearing rivers, with other streams meandering across Bengal, have built up a vast alluvial plain. Inland swamps fringe out into ragged fingers at the Bay of Bengal.

Tigers and crocodiles still haunt the wilder regions, but the big Bengal tiger has been driven back by the ever-increasing population.

Pre-partitioned Bengal had more than 60 million people, nearly half the number in the entire United States. Most of them belong to the Bengali race and speak the Bengali tongue. About 55 per cent of Bengal's inhabitants were Mohammedans.

More than 2,000,000 Bengalese are concentrated in Calcutta and its suburbs. This important port joined the Dominion of India because

East-coast Americans are likely to forget California when they think of winter record-making. But no other point in the nation can outdo the state's Giant Forest, in Sequoia National Park, where a 60-inch snow fell on January 19, 1933, or Tamarack, near by, where the fall was 73 feet, eight inches, during the winter of 1906-07.

The Arctic ice cap, most scientists agree, is still retreating northward as it has been for 20,000 years or more. It once reached into United States territory and covered nearly all Europe. Russians say Siberia's year-round frost line retreats poleward about 100 feet a year. Stefansson finds Arctic seas one degree warmer than a decade ago. Drier, milder winters, in the long run, are indicated.

If all polar ice melted in one great thaw, the level of the seas would rise 50 feet, submerging parts of most seacoast cities.

NOTE: For additional information, see "Our Navy Explores Antarctica," in the *National Geographic Magazine* for October, 1947; and "Weather Fights and Works for Man," December, 1943.

See also, in the GEOGRAPHIC SCHOOL BULLETINS, March 4, 1946, "Man's Friend and Foe, Weather Wins Wars, Spoils Picnics."

AP FROM PRESS ASS'N

FROST FILIGREES A WINDOWPANE, OUTDOING MAN'S MOST DELICATE ARTISTRY

Along with winter weather's discomforts and trouble comes the delight—especially to children—of witnessing the soft magic of snowfall and the wondrous painting of Jack Frost. When the air inside is moist and the temperature outside is below freezing, frost forms on the inside of unprotected windows. The moisture condenses and freezes on the glass in tiny and numerous ice crystals. Designs of fragile lace, fairy landscapes, or flowering plants appear as the crystals increase.

it is overwhelmingly Hindu (illustration, below). Hindu caste marks on the foreheads are seen everywhere. The sacred cows wander at will along the streets, in the midst of the busiest traffic.

In rural districts, millions live chiefly by and because of the rivers and canals. These waterways provide both livelihood and transport.

In the delta region, houses are built high on mounds to escape floods. Paddy rice thrives in the marshy soil. Workers in loin cloths and turbans harvest the jute from flooded fields.

The rainy-season overflow that leaves behind rich layers of soil, however, may also bring destruction and death. Equally devastating is crop failure which may result in famine. Bengal's worst shortage for many years occurred in 1943-44, when lack of local rice was aggravated by the cutting off of normal imports from Japanese-occupied Burma.

NOTE: Bengal may be located on the Society's map of India and Burma.

For additional information, see "India—Yesterday, Today, and Tomorrow," in the *National Geographic Magazine*, October, 1943*; and "In the Realms of the Maharajas," December, 1940; see also, in the GEOGRAPHIC SCHOOL BULLETINS, October 13, 1947, "Pakistan Is Divided State in Divided Land;" and "Shellac and Jute Trade Centers at Calcutta," November 11, 1946.

EMIL REYNOLDS FROM AMERICAN RED CROSS

TRANSFIXED BY THE SIGHT, RED CROSS GIRLS WITNESS HUMAN CREMATION IN CALCUTTA

The body is burned in an open fire on the Ganges ghats—steps leading into the holy river. Seemingly indifferent relatives (rear) watch. Then they throw the ashes on the river and plunge in themselves. The ashes of Gandhi, India's assassinated leader, were committed to the Ganges in this traditional fashion—not at Calcutta, but far upstream at the junction of the equally sacred Jumna River.